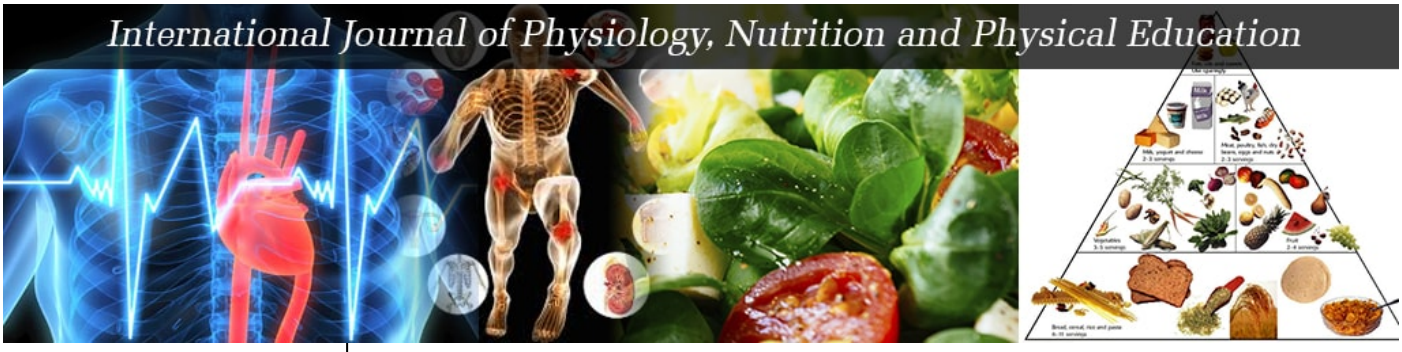

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A comparative study of selected physical and physiological variables of Kabaddi and football players

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Abstract
Purpose: To compare the selected physical and physiological variables of Kabaddi and Football inter College Players Participants 30 players of Football and 30 Kabaddi represented their school in the interschool tournament during 2014-15session from Deoria, U.P were selected as subjects, their age ranged from 15 to 18 years.
Methodology: The study was an experimental research, the selected physical fitness and physiological variables such as speed, explosive strength, and cardiovascular endurance were tested.
Analysis of data: 't' test were applied to check the significant difference between the group. The Level of Significance was set at 0.05 level.
Results: There was significant difference between physical i.e. flexibility and explosive strength & physiology variables and there was no significant difference between physical variables i.e. Endurance and agility.
Conclusion: it was concluded that there was a significant difference in some selected physical & physiological variables i.e. speed, explosive strength & endurance, agility.

Keywords: Speed, endurance, agility, explosive strength, heart rate, vital capacity and cardiovascular endurance

Introduction
Sports is one of the avenues of man's never ceasing strive for excellence. Its uniqueness lies in the intimacy between the physical happenings of human bodies and their repercussions on their minds as well as in the general reconcilability of the social and aesthetic values which sport engenders. Sport evokes experiences that are exclusively human and independent of the changing forms, patterns and customs of a civilization which involves profoundly modifying concepts of our environment. According to Clarke, H. Harrison (1976) in a society where material values predominates, participation solely for pleasure, recreation and allied benefits in any activity such as sports, that demands much time, energy and self-discipline is not likely to be very popular or widely practiced doctrine especially when the nations of the world are openly using sports as an approach to national fitness and international prestige. Fitness and training are the most misused and over used words in English language. Sir Roger Bannister defined "Physical Fitness" as a state of mental and physical harmony. Which enables someone to carry on his occupation to the best of his ability with the greatest happiness? There will be no significant difference between physical and physiological components between Kabaddi and Football players.

Material and methods
Subjects
Data were collected on two groups of 30 Football and 30 Kabaddi from Deoria (U.P) and those who had represented their inter school tournament during 2014-15 session were selected as subjects, their age ranged from 15 to 18 Years.

Table 1: Procedure for administrating test

Physical/Physiological Variables	Objective	Apparatus used	Test description	scoring
Speed	To measure the speed of the performer in Sprint.	50 m track, stop watch	Sprint run	In seconds
Explosive strength	To measure the explosive strength	Marked wall measuring tape, chalk powder	Subject was stand laterally and swings his arm backward and goes downward and then jumps vertically and touching the wall by the tip of the middle finger.	Scoring was done in centimeter of distance from the normal height to the nearest contact point on the wall.
Cardio vascular endurance	To measure the cardiovascular endurance	18' High platform, stop watch chairs.	The subjects were in their Proper Sports Dresses. They stepped on a 18' high platform, stepping 24 times per minute. The rate was set by metro norm, under the careful guidance of evaluator. Endurance was restricted to 3 minutes (180 Seconds). At the most recovery heart rate was recorded from 0.1 to 1.5 minutes.	Scoring in seconds
Heart rate	To measure the pulse count.	Stop watch, Chair	The subject sitting on the chair in easy condition and radial pulse is counted by the evaluator in 1 minute.	Total pulse is counted in 1 minute
Blood pressure	To measure blood pressure	Sphygmomano meter	The subject sitting on the chair in easy condition and by the use of that mesure BP.	Record score
Vital capacity	Determination of vital capacity	Dry spirometer, Nose clip	The vital capacity of the subject was determined by the dry spirometer in sitting position. The subject was allowed to respire the maximum amount of air voluntarily and then he was asked to blow into the dry spirometer to the maximum extent. While taking the test nose of the subject was clipped using a nose clip.	The vital capacity of the subject was obtained from the movement of the circular volume indicator which was set at '0' before the vital capacity measure was taken. The result was calculated in liter.

Statistical analysis

't' test was applied to check the significant difference between the group. The level of significance was set at 0.05 level of physical and Physiological variables of Kabaddi and Football Players is presented in table 1, 2, 3 and 4.

Results

Table 2: Mean and SD of Physical Variables of Kabaddi and Football Players

S. N.	Variables	Mean (Kabaddi)	SD (Kabaddi)	Mean (Football)	SD (Football)
1.	Speed	16.6	5.21	20.5	5.04
2.	Explosive strength	48.7	9.96	40.5	8.47
3.	Cardiovascular endurance	72.2	9.81	64.5	5.00

It is evident from the table I that the mean of Kabaddi players in the physical variable i.e. speed, cardio vascular endurance and explosive strength are 16.6 (C.M.) for flexibility, 2.331 (m) for endurance, 19.8 (Sec) for agility and 48.7 (C.M.) for explosive strength and in the case of Football players for the physical variables i.e. flexibility, endurance, speed and explosive strength are 20.5 (C.M) for speed, 2.276 (M) for endurance, 15.1 (Sec) for and 40.5(C.M.) for explosive strength.

Table 3: Mean and SD of Physiological Variables of Football and Kabaddi Players

Variables	Mean (Kabaddi)	SD (Kabaddi)	Mean (Football)	SD (Football)
Pulse	72.9	9.19	58.9	5.31
Vital capacity	2.985	442.0	3.406	498
Blood pressure	72.2	9.81	64.5	5.00

It is evident from the table 2 that mean of Kabaddi players in the physiological variable i.e. Heart Rate, vital capacity and BP are 72.2 for BP, 72.9 for Heart Rate and 2.985 for vital capacity and in the case of Football Players for the variable physiological i.e., Heart Rate, vital capacity and cardiovascular endurance are 58.9 (beat) for Heart Rate, 3.406 (mm) for vital capacity and 64.5 (sec) for cardiovascular endurance.

Table 4: Significance of Differnces of Mean in Selected Physical Variables of Kabaddi and Football Players

S.N	Variables	Mean differences	't' ratio
1.	Speed	3.9	2.90
2.	Explosive strength	8.82	3.44
3.	Cardiovascular endurance	7.77	3.86

*Significant at 0.05 level of confidence.

Table 5: Significance of Differnces of Mean in Selected Physiological Variables between Kabaddi and Football Player

S. N.	Variables	Mean differences	't' ratio
1.	Heart rate	14.0	2.06
2.	Blood pressure	7.7	3.86
3.	Vital capacity	0.475	3.90

*Significant at 0.05 level of confidence.

Discussion

It is revealed from table 1 that mean value of speed and endurance of Football players is better than the Kabaddi players, but in the case of explosive strength players were found better in comparison to football players. Similarly, in the case of explosive strength it was found the same. Thus the result indicates that football players had more speed and the endurance in the comparison of Kabaddi players. Similarly, in case of agility the mean of Kabaddi and football players are

almost the same shows that Kabaddi and football players both have same ability as agility is concerned. As far as the explosive strength is concerned the Kabaddi players found better in comparison to football players.

It is evident from table 2 that the mean of heart rate, vital capacity and cardiovascular endurance of football players is better than the Kabaddi players. It is found that the mean of Kabaddi players is better than heart rate, vital capacity and cardiovascular endurance in comparison of Kabaddi players.

It is evident from table 3 that the mean differences of KABADDI and football players in the physical variables 3.9, 8.2, 0.155 and 4.7 respectively. The 't' value 2.90 for speed was significant freedom. The result indicated that Kabaddi players has better explosive strength in comparison the football players.

Similarly in the case of endurance 't' value .628 was not significant at 0.05 level of confidence. In the case of speed the 't' value 1.37 was not significant at 0.05 level of confidence. It is evident from table 4 that the mean differences of Kabaddi and football players in the variables physiological is 4.75, 7.7, 14, and 4.90 respectively. The result indicated that football players had better vital capacity in comparison to Kabaddi players. Similarly in the case of cardiovascular endurance the't' value 3.86 was significant at 0.05 level of confidence. The result indicated that football players had better cardiovascular endurance in comparison to Kabaddi players.

Similarly in the case of heart rate 't' value 2.06 was not significant at 0.05 level of confidence at the degree of freedom. The statistical analysis of data revealed that there was a significant differences in selected physical variable i.e. speed and explosive strength between inter college Kabaddi and football players. The finding of the study also revealed that there was a significant difference in selected physiological variable i.e. heart rate, vital capacity, and cardiovascular endurance at 0.05 level of significance with 29 degree of freedom. The result of the study also stated that there was no significant differences found in selected physical i.e. endurance and agility. The game of Kabaddi included multiplicity of skills involving possible time. The Kabaddi game demands that the players not only master all this movement and understand exactly when to use them but also that he can perform quickly and accurately in shortest possible time as and when demanded because of such demand. The Kabaddi players are more flexible than the Football Players.

Recommendations

1. The similar study could be done on the female Kabaddi and Football players.
2. A similar study could be investigated at higher level like national level, taking a large number of subjects.
3. A Similar study could be done with subject belonging to difference age group.
4. Coaches of different team can select players according to the study.

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